

ABSTRACT

User profile information for a user may be determined by (a) determining initial user profile information for the user, (b) inferring user profile information for the user, and (c) determining the user profile information for the user using both the initial user profile information and the inferred user profile information. Initial user profile information for the user may be determined using past search queries submitted by the user, and/or past document selections by the user.

User profile information for the user may be inferred by (a) defining a node for each of a number of documents and the user, (b) adding edges between nodes if there is an association between the nodes to define a graph, and (c) inferring user profile information for the user using a topology of the graph and user profile information of other documents. Similarly, user profile information for a

document may be determined by (a) determining initial user profile information for the document, (b) inferring user profile information for the document, and (c) determining the user profile information for the document using both the initial user profile information and the inferred user profile information. The initial user profile information for the document may be determined using content

information from the document, and/or document meta information. User profile information for the document may be inferred by (a) defining a node for each of a number of documents and for each of a number of users, (b) adding edges between nodes if there is an association between the nodes to define a graph, and (c) inferring user profile information for the document using a topology of the graph and user profile information of users and of other documents. Document,

user, and/or ad user profile information may be used when serving ads.